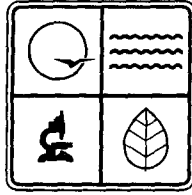


STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI AIR CONSERVATION COMMISSION



PERMIT BOOK

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **012006-012** Project Number: **2005-11-085**

Owner: **Northeast Missouri Humane Society**

Owner's Address: **2923 Warren Barrett Drive, Hannibal, MO 63401**

Installation Name: **Northeast Missouri Humane Society**

Installation Address: **P.O. Box 205, Hannibal, MO 63401**

Location Information: **Ralls County, S6, T56N, R4W**

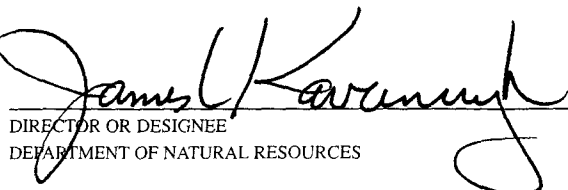
Application for Authority to Construct was made for:

Installation of a Therm-Tec Model S-27 animal incinerator. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

-
- ☐ Standard Conditions (on reverse) are applicable to this permit.
- ☒ Standard Conditions (on reverse) and Special Conditions (listed as attachments starting on page 2) are applicable to this permit.

JAN 23 2006

EFFECTIVE DATE


DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. Also, you must notify the Department of Natural Resources Regional Office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed Special Conditions as provided in RSMo 643.075. If you choose to appeal, the Air Pollution Control Program must receive your written declaration within 30 days of receipt of this permit.

If you choose not to appeal, this certificate, the project review, your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Department of Natural Resources has established the Outreach and Assistance Center to help in completing future applications or fielding complaints about the permitting process. You are invited to contact them at 1-800-361-4827 or (573) 526-6627, or in writing addressed to Outreach and Assistance Center, P.O. Box 176, Jefferson City, MO 65102-0176.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention Construction Permit Unit.

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Permit No.	
Project No.	2005-11-085

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Northeast Missouri Humane Society
Ralls County, S6, T56N, R4W

1. Process Requirements

- A. Northeast Missouri Humane Society will burn exclusively non-infectious animal bodies or body parts not in containers and non-infectious animal bodies or body parts in containers not containing chlorine.
- B. The incinerator shall have an operable door lockout mechanism that prohibits the charging of waste between burn cycles.
- C. The incinerator shall be equipped with a continuous chart recorder that is able to monitor, display and record the temperature in the final combustion chamber to an accuracy of plus or minus two percent (2%).
- D. The incinerator shall have a minimum combustion efficiency of 99.9% determined from the carbon dioxide (CO₂) concentration divided by the sum of the carbon monoxide (CO) and CO₂ concentrations.

2. Record Keeping Requirements

- A. Northeast Missouri Humane Society shall maintain an accurate record of the monthly amount and type of waste combusted at this installation. The installation shall use Attachment A or other equivalent form(s) approved by the Air Pollution Control Program for this purpose. Northeast Missouri Humane Society shall maintain records on-site for the most recent 60 months of all records required by this permit and shall immediately make such records available to any Missouri Department of Natural Resources' personnel upon verbal request.

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Permit No.	
Project No.	2005-11-085

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

3. Opacity

- A. The incinerator shall have opacity of less than ten percent (10%) at all times.

4. Operator Requirements

- A. The incinerator operator shall have the essential steps necessary for satisfactory operation of the incinerator readily available to him in an easy to read and follow manual.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2005-11-085
Installation ID Number: 173-0032
Permit Number:

Northeast Missouri Humane Society
P.O. Box 205
Hannibal, MO 63401

Complete: November 23, 2005
Reviewed: December 29, 2005

Parent Company:
Northeast Missouri Humane Society
2923 Warren Barrett Drive
Hannibal, MO 63401

Ralls County, S6, T56N, R4W

REVIEW SUMMARY

- Northeast Missouri Humane Society has applied for authority to install a Therm-Tec Model S-27 animal incinerator.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. However, since this unit is burning pathological waste, HAP emissions are not expected to be significant.
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. All incinerators are required to obtain a permit from the Air Pollution Control Program as mandated in 10 CSR 10-6.060. Potential emissions are less than de minimis levels.
- This installation is located in Ralls County, an attainment area for all criteria air pollutants.
- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].

- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing is not required for the equipment.
- On November 23, 2005 the Air Pollution Control Program received a Basic Operating Permit Amendment to include the Therm-Tec Model S-27 incinerator from Northeast Missouri Humane Society (project 2005-11-091).
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Northeast Missouri Humane Society operates an animal shelter in Hannibal, Missouri. The shelter currently has a Shenandoah Model P-16-2GNT incinerator, which will be removed and replaced by the Therm-Tec incinerator. The following permits have been issued to Northeast Missouri Humane Society from the Air Pollution Control Program.

Table 1: Previously Issued Permits

Permit Number	Description
2002-04-204	Basic State Operating Permit.
0194-004	Installation of a Shenandoah Model P-16-2GNT animal incinerator.

PROJECT DESCRIPTION

Northeast Missouri Humane Society has applied for the authority to construct a Therm-Tec Model S-27 incinerator to be used for the cremation of deceased animal remains. The Therm-Tec Model S-27 unit is a multiple chamber design unit with a rated capacity of 75 pounds per hour. Natural gas is used to power the unit that has a maximum heat input rate of 0.89 million Btu per hour. The Therm-Tec Model S-27 incinerator will replace the one permitted under 0194-004 (Shenandoah Model P16-2GNT).

EMISSIONS/CONTROLS EVALUATION

Performance test results for PM₁₀ and CO were submitted with the application for this permit. The test results showed an average PM₁₀ concentration of 0.035 gr/dscf at 7% O₂. The test also yielded an average CO₂ concentration of 7600 ppmv compared to a CO concentration of 7 ppmv, which results in a combustion efficiency of 99.91%.

Stack test emission factors were used to calculate potential emissions of PM₁₀ and CO. Potential emissions of SO_x, NO_x and VOCs were estimated using emission factors from Factor Information Retrieval (FIRE) V6.24, *Source Classification Codes and Emission Factors Listing for Criteria Air Pollutants* (SCC 5-02-001-01).

Due to the nature of pathological waste incineration, hydrogen chloride (HCl) and metal emissions, such as lead, antimony, mercury and cadmium, may be present. However, these emissions will be small enough to be considered insignificant.

Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). The following table provides an emissions summary for this project.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions ¹	Existing Actual Emissions (2004 EIQ)	Potential Emissions of the Application	New Installation Potential Emissions ²
PM ₁₀	15.0	1.2	0.18	0.31	0.31
SOx	40.0	0.4	0.24	0.42	0.42
NOx	40.0	0.5	0.09	0.50	0.50
VOC	40.0	0.5	0.01	0.50	0.50
CO	100.0	1.8	N/D	0.03	0.03
HAPs	10.0/25.0	N/D	N/D	N/D	N/D

*N/D = Not Determined

Note1: The existing potential emissions for the installation were obtained from information contained in Permit Number 0194-004.

Note2: This incinerator is replacing the incinerator permitted under 0194-004, therefore the installation potential emissions are the same as the potential emissions of the application.

PERMIT RULE APPLICABILITY

The increase in potential emissions for all the criteria air pollutants and the Hazardous Air Pollutants for this project were estimated to not exceed their respective de minimis levels. Therefore, this review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

APPLICABLE REQUIREMENTS

Northeast Missouri Humane Society shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required April 1 for the previous year's emissions.
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-3.090

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Michael Van Cleave
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated November 1, 2005, received November 4, 2005, designating Northeast Missouri Humane Society as the owner and operator of the installation.
- Factor Information Retrieval (FIRE) V6.24, *Source Classification Codes and Emission Factors Listing for Criteria Air Pollutants*
- Northeast Regional Office Site Survey, dated December 12, 2005.

ATTACHMENT A: Waste Tracking Worksheet

Northeast Missouri Humane Society
Ralls County, S6, T56N, R4W
Project Number: 2005-11-085
Installation ID Number: 173-0032
Permit Number:

This sheet covers the period from _____ to _____.
(month, year) (month, year)

Copy this sheet as needed.

[illegible]